



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/303,791	04/30/1999	RORY MATTHEW JOHNSON	G-00263/US	8861
35758	7590	11/03/2004		
GKN DRIVELINE NORTH AMERICA, INC 3300 UNIVERSITY DRIVE AUBURN HILLS, MI 48326			EXAMINER GARCIA, ERNESTO	
			ART UNIT 3679	PAPER NUMBER

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/303,791

Applicant(s)

JOHNSON, RORY MATTHEW 

Examiner

Ernesto Garcia

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-4, 9 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8, 10, 11 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1, 3 and 4, drawn to a constant velocity universal joint boot, classified in class 464, subclass 173.
- II. Claims 8, 10, 11 and 13, drawn to a constant velocity universal joint assembly and a constant velocity universal joint and propeller shaft assembly, classified in class 403, subclass 51.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the assemblies do not require a boot having an outwardly curved portion and a stem portion arranged between the neck member and the outwardly curved portion. The subcombination has separate utility such as with a ball-and-socket joint.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Michael T. Raggio on September 29, 2004, a provisional election was made without traverse to prosecute the invention of group II, claims 8, 10, 11 and 13. Applicant in replying to this Office action must make affirmation of this election. Claims 1, 3 and 4 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

The substitute specification will be marked "not entered" as a substitute specification was not needed after all. Since the case has been switched to electronic form, the errors that were addressed do not appear on the originally submitted papers. These errors must have occurred through a copy machine malfunctioning as the errors are not reflected in the original papers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3679

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al., 5,707,066, in view of Welschof et al., 4,747,805.

Regarding claim 8, Sugiura et al. disclose, in Fig. 2, a constant velocity universal joint assembly comprising a constant velocity universal joint having an outer race **41**, a boot-can **9**, and a non-convoluted thermoplastic rolling-diaphragm boot **2**. The boot-can **9** has a first end **20** and a second flanged end **18** spaced apart from the first end **20** and the outer race **41**. The boot **2** has a crimping lip **6** received by the second flanged end **18**. The crimping lip **6** has a thickness greater than other portions of the boot **2** (at 6 vs. 2 and 8). However, Sugiura et al. fail to disclose radially distributed apertures on the crimping lip **6**. Welschof et al. teach in Figure 4 a crimping lip **2d** having radially distributed apertures **2e** for increasing resiliency of the boot (col. 3, lines 62-68). Therefore, as taught by Welschof et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the radially distributed apertures on a crimping lip to increase resiliency of a boot.

The apertures **2e** increase compressibility of the crimping lip such that the crimping lip has a compress thickness ratio approximately 50% to 70% of an uncompressed crimping lip thickness. Applicant is reminded that without the apertures, the crimping lip already has a compress thickness ratio approximately 50% to 70% of

Art Unit: 3679

the uncompressed crimping lip thickness as the material inherently establishes this kind of compressibility. The introduction of the apertures **2e** will further allow compressibility thus the crimping lip will have a compressed thickness ratio approximately 50% to 70%.

Claims 8, 10, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al., 5,707,066, in view of Burnett, 3,195,360.

Regarding claim 8, Sugiura et al. disclose a constant velocity universal joint assembly comprising a constant velocity universal joint **41,43-45** having an outer race **41**, a boot-can **9**, and a non-convoluted thermoplastic rolling-diaphragm boot **2**. The boot-can **9** has a first end **20** and a second flanged end **18** spaced apart from the first end **20** and the outer race **41**. The boot **2** has a crimping lip **6** received by the second flanged end **18**. The crimping lip **6** has a thickness greater than other portions of the boot **2** (at 6 vs. 2 and 8). However, Sugiura et al. fail to disclose radially distributed apertures on the crimping lip **6**.

Burnett teaches, in Figures 3 and 4, a crimping lip **12** having radially distributed apertures **20** oriented parallel to a longitudinal axis to allow air to escape from a joint (col. 2, lines 25-30). Therefore, as taught by Burnett, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include radially distributed apertures oriented parallel to the longitudinal axis to let air escape from the joint. Applicant is reminded that the apertures **20** inherently increase compressibility of

Art Unit: 3679

the crimping lip such that the crimping lip has a compressed ratio approximately 50% to 70% of an uncompressed crimping lip thickness.

Regarding claim 10, the radially distributed apertures **20** include radially distributed cut-outs.

Regarding claim 11, Sugiura et al. disclose, in Fig. 2 (see marked-up attachment), a constant velocity universal joint and propeller shaft assembly comprising a propeller shaft **21**, a constant velocity universal joint **41,43-45**, a boot-can **9**, and a non-convoluted thermoplastic rolling-diaphragm boot **2**. The propeller shaft **21** has a first end. The constant velocity universal joint **41,43-45** includes an outer race **41** having a first face **A13**. The boot-can **9** has a large-diameter end **20** and a small-diameter flanged end **18**. The boot **2** has a sealing end **5**, a tubular stem portion **8**, and an annular upturned edge **A14** crimpingly affixed to the small-diameter flanged end **18**. The sealing end **5** cooperates with the propeller shaft **21**.

The joint **41,43-45** is for receiving the first end of the propeller shaft **21**. The large-diameter end **20** is for mating with the first **A13**. The tubular stem portion **8** is for receiving the propeller shaft.

However, Sugiura et al. fail to disclose the annular upturned edge **A14** having radially distributed apertures on a radially inward facing surface. Burnett teaches, in

Art Unit: 3679

Figures 3 and 4, an annular upturned edge **12** having radially distributed apertures **20** on a radially inward facing surface **38** oriented parallel to a longitudinal axis to allow air to escape from a joint (col. 2, lines 25-30). Therefore, as taught by Burnett, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include radially distributed apertures oriented parallel to the longitudinal axis to let air escape from the joint. Applicant is reminded that the apertures **20** inherently increase compressibility of the annular upturned edge, and the apertures reduce required crimping force by up to approximately 50%.

Regarding claim 13, the radially distributed apertures **20** include radially distributed cut-outs.

Response to Arguments

Applicant's arguments with respect to claims 8, 10, 11 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Specifically, the new limitation "said crimping lip having a thickness that is greater than other portions of said boot" recited in claim 8 in lines 7-8, and the

Art Unit: 3679

new limitation "said apertures reduce required crimping force by up to approximately 50%" as recited in claim 11 in lines 12-13. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 703-308-8606. The examiner can normally be reached from 9:30-6:00. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on 703-308-2686. Any inquiry of a

Art Unit: 3679

general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



E.G.

October 24, 2004

Attachment: one marked-up copy of Welschof et al., 4,747,805.

DANIEL P. STODOLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

